

CLAIMS

What is claimed is:

1. A process for preparing a heat curable coating composition, comprising exposing a powder comprising a carboxyl-functional polymer and a polyepoxy compound to an amine chosen from the group consisting of organic amines and ammonia under mild conditions.
2. The process of Claim 1, wherein said carboxyl-functional polymer is selected from the group consisting of carboxyl-functional polyester resins, carboxyl-functional polyacrylate resins, carboxyl-functional polymethacrylate resins, carboxyl-functional polyamide resins, carboxyl-functional polyimide resins and carboxyl-functional polyolefin resins.
3. The process of Claim 2, wherein said carboxyl-functional polymer is a carboxyl-functional polyester resin.
4. The process of Claim 1, wherein said organic amine is selected from the group consisting of C₁-C₁₂ alkylamines, C₆-C₁₂ arylamines, C₇-C₁₂ alkarylamines, and C₇-C₁₂ aralkylamines.
5. The process of Claim 4, wherein said organic amine is selected from the group consisting of methylamine, ethylamine, propylamine, butylamine, ethylenediamine, methanolamine, ethanolamine, aniline, cyclohexylamine, benzylamine, dimethylamine, diethylamine, dipropylamine, dibutylamine, dimethanolamine, diethanolamine, diphenylamine, phenylmethylamine, phenylethylamine, dicyclohexylamine, piperazine, imidazole, 2-methylimidazole, 2-ethylimidazole, 2-ethyl-4-methylimidazole, 2-isopropylimidazole, 2-phenylimidazole, 2-methylimidazoline, 2-phenylimidazoline, trimethylamine, triethylamine, dimethylhexylamine, N-methylpiperazine, dimethylbenzylamine, and dimethylaniline or mixtures thereof.
6. The process of Claim 1, wherein said amine is in a state selected from the group consisting of vapor, liquid or dispersed in a solvent.
7. The process of Claim 1, wherein said powder is exposed to ammonia.
8. The process of Claim 1, wherein said powder is exposed to aqueous ammonia.
9. The process of Claim 5, wherein said organic amine is triethylamine.
10. The process of Claim 1, wherein said mild conditions comprises temperatures between -30°C and +50°C.

11. The process of Claim 10, wherein said mild conditions comprises temperatures between -10°C and +10°C.
12. The process of Claim 1, wherein said exposure occurs before said powder is applied to a substrate.
- 5 13. The process of Claim 1, wherein said exposure occurs after said powder is applied to a substrate.
14. The product of the process of Claim 1, 11 or 12.
15. An article of manufacturing coated by the product of Claim 1, 11 or 12.
- 10 16. A process for preparing a heat curable coating composition, comprising exposing a powder comprising a carboxyl-functional polymer and a polyepoxy compound to a catalyst that is substantially free of ions.
17. The process of Claim 16 wherein the catalyst is a nitrogen-containing compound.
18. A cured coating composition prepared from a powder comprising a carboxyl-functional polymer and a polyepoxy compound, wherein the curing of the composition is catalyzed by a nitrogen-containing compound and the composition is substantially free of catalyst residue.
- 15 19. The composition of Claim 19 wherein the catalyst residue is ionic catalyst residue.
20. An article of manufacture coated by the composition of Claim 18.

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